

Fig. 1

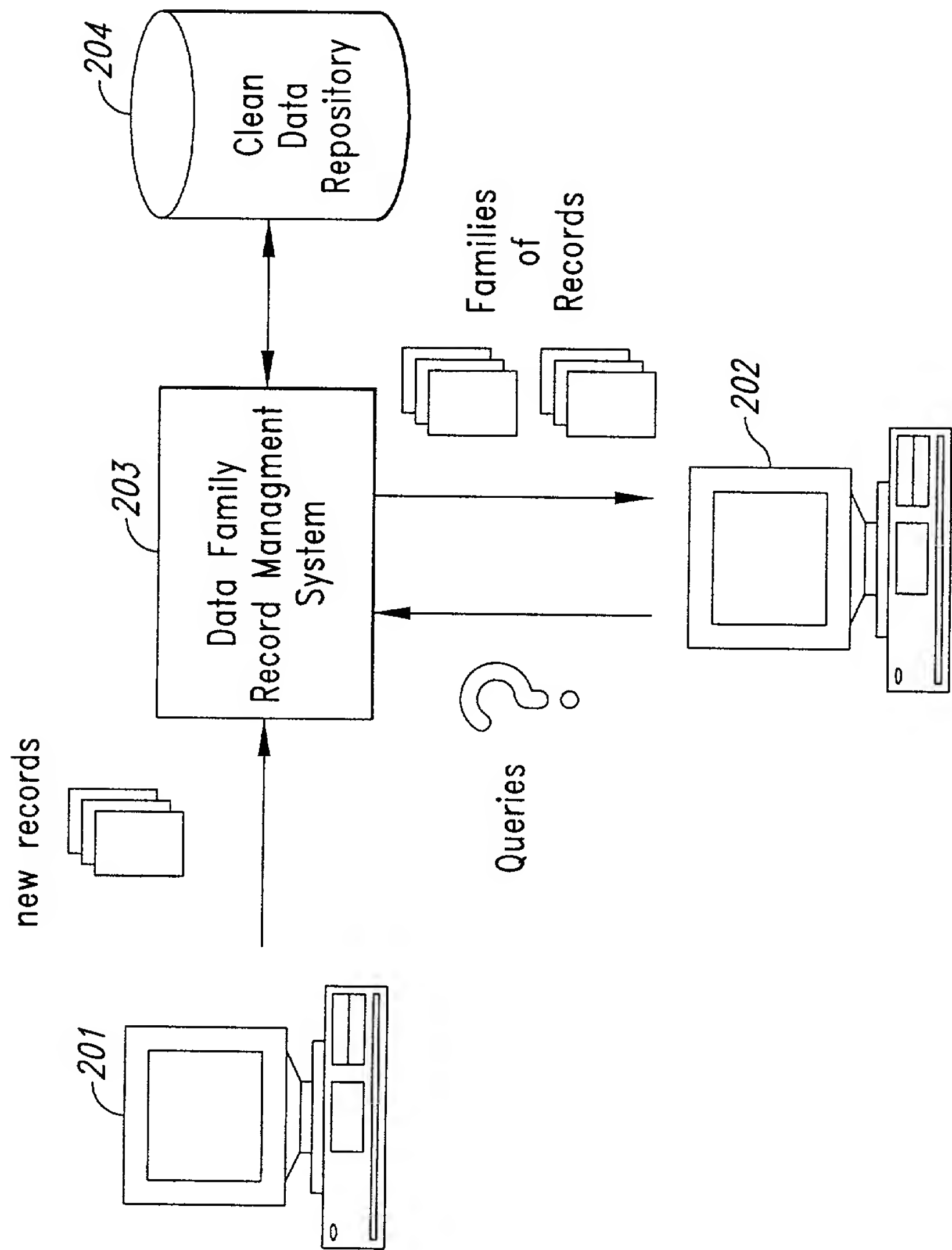


Fig. 2

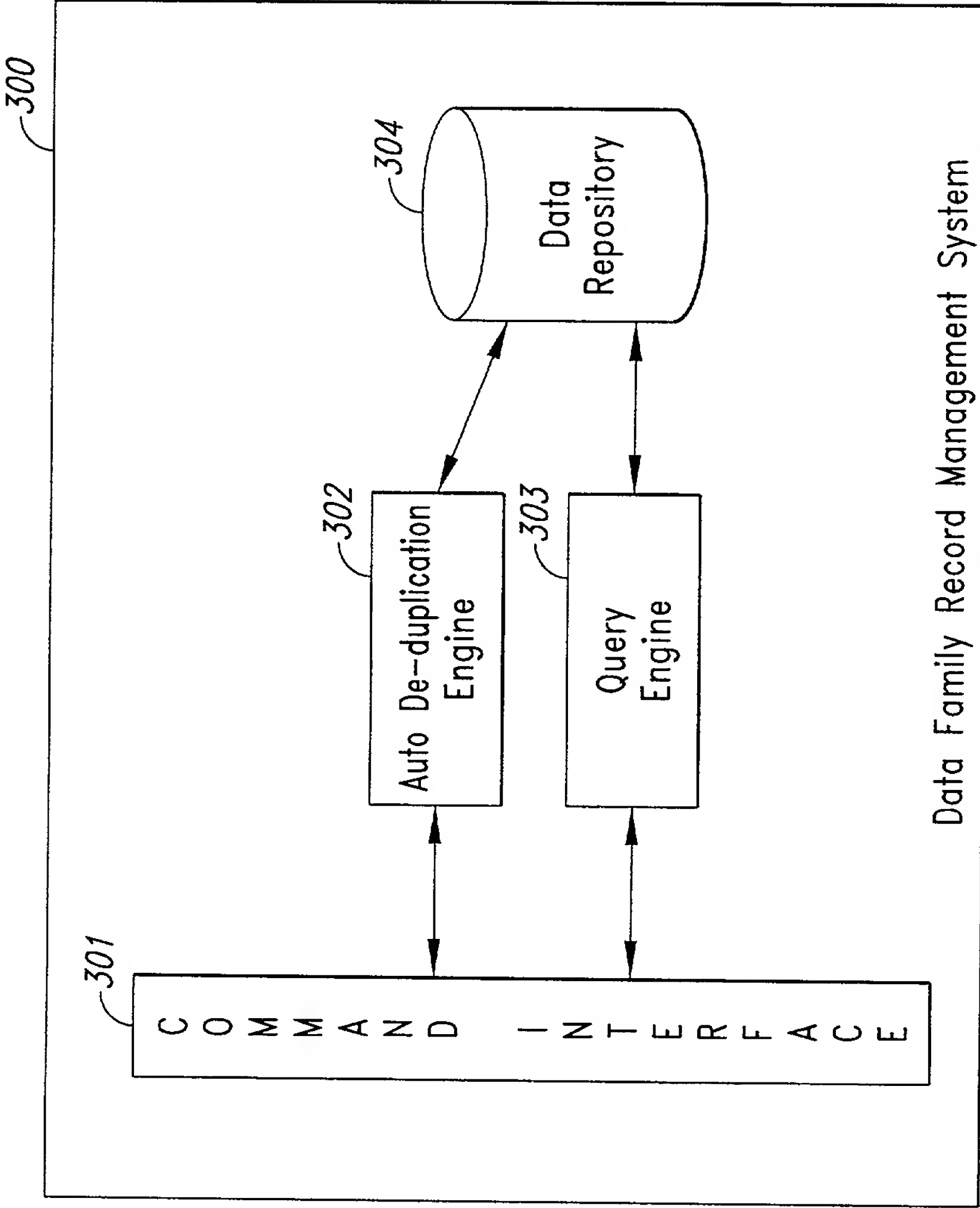


Fig. 3

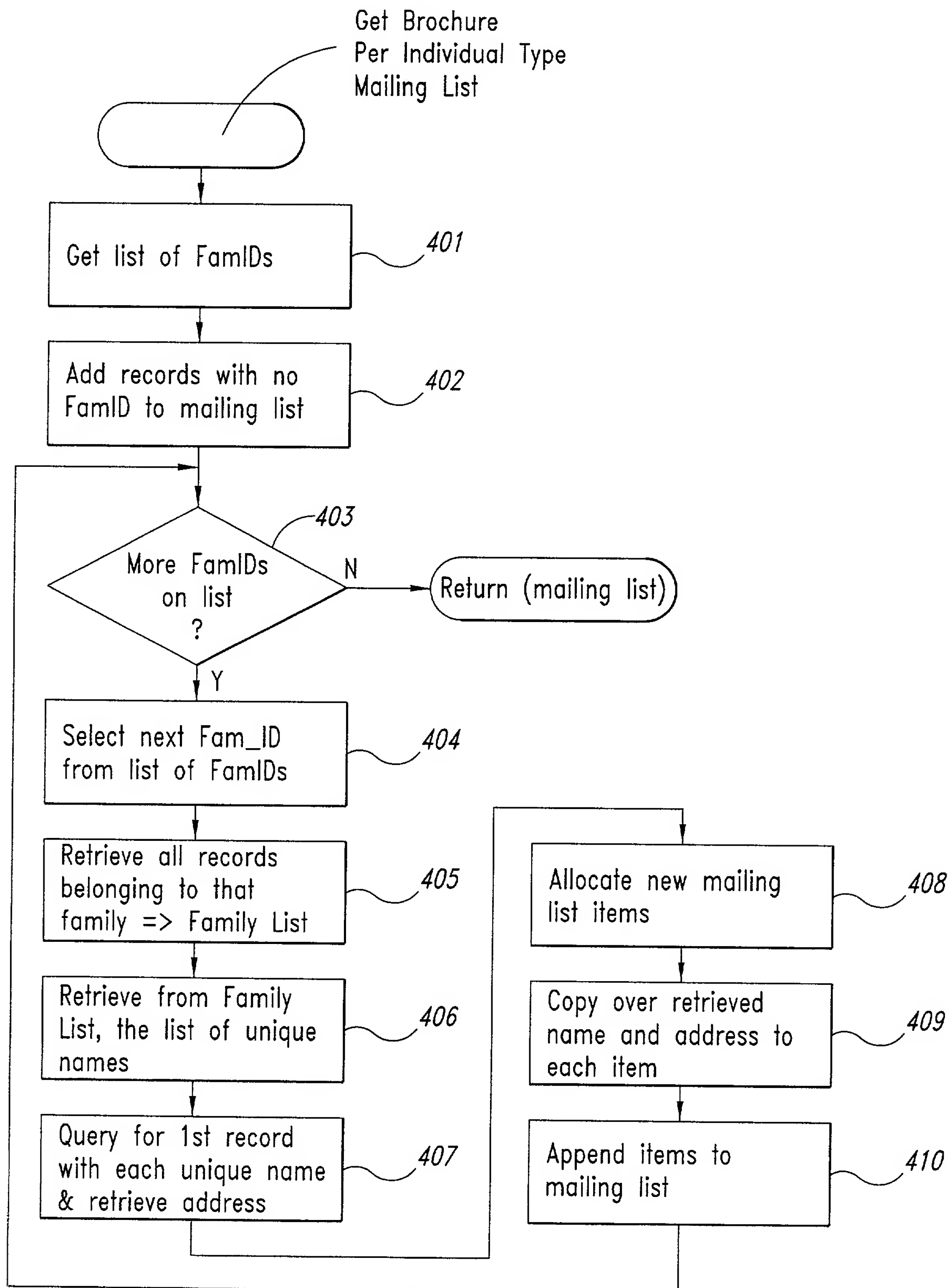


Fig. 4

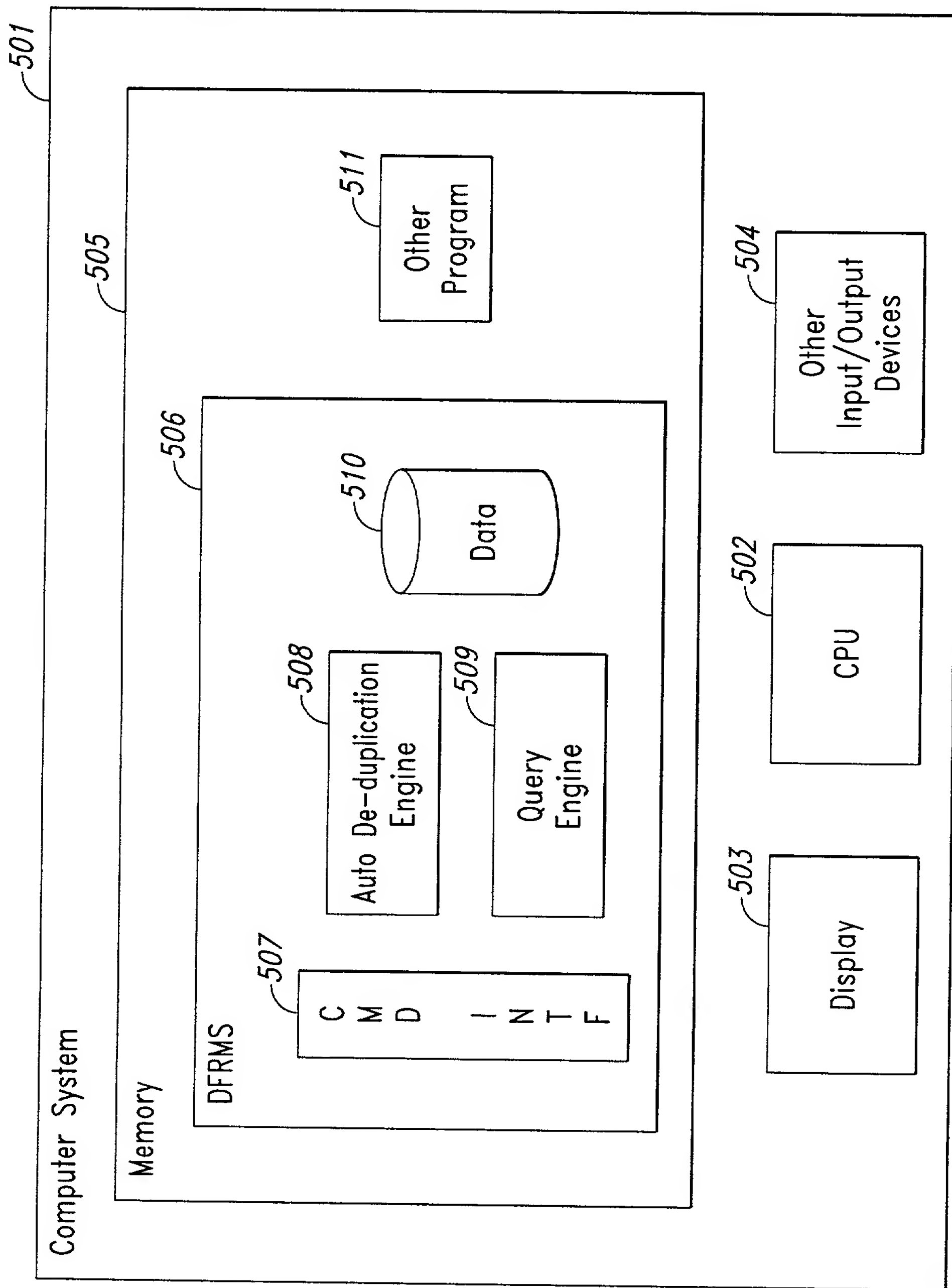


Fig. 5

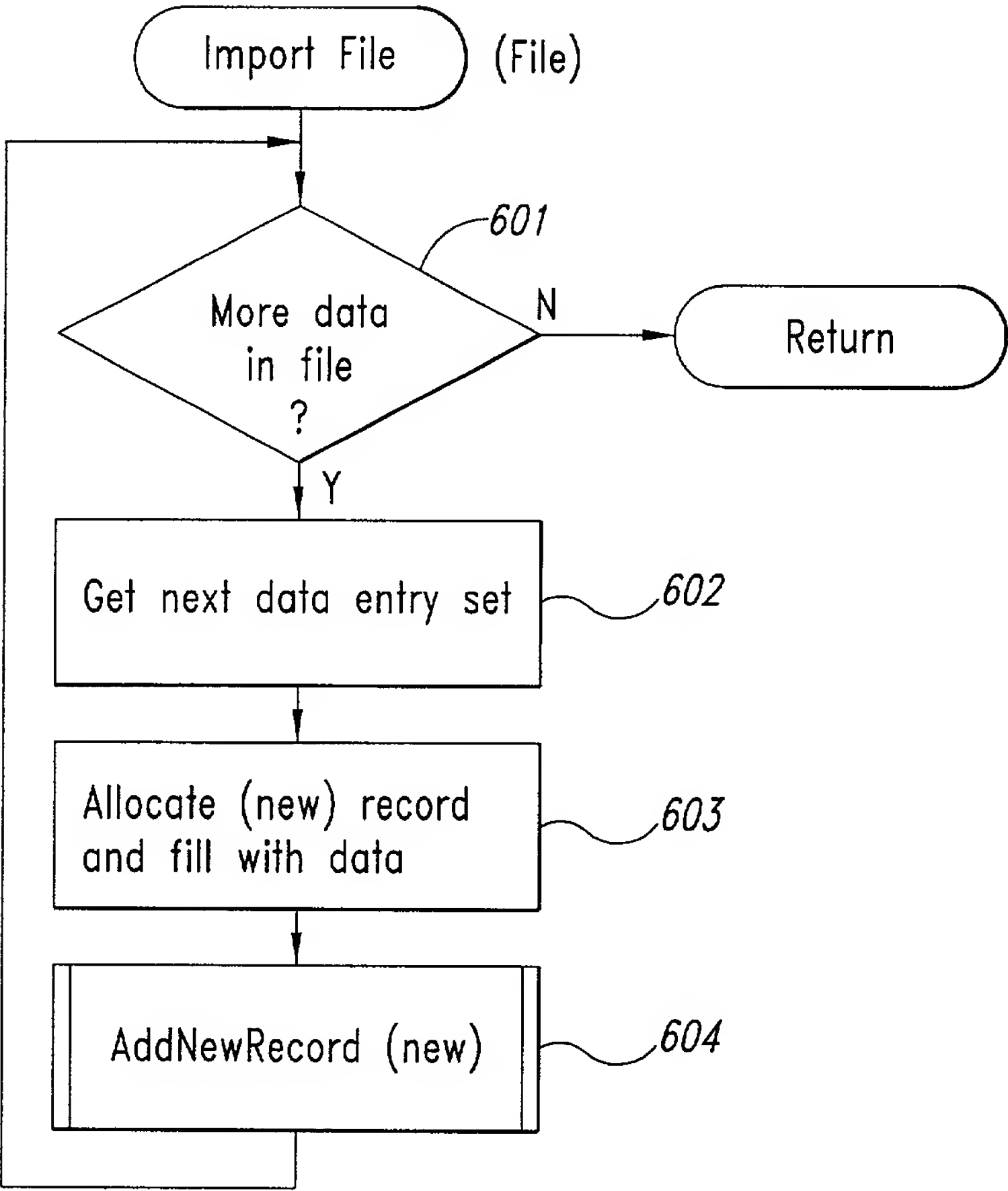


Fig. 6

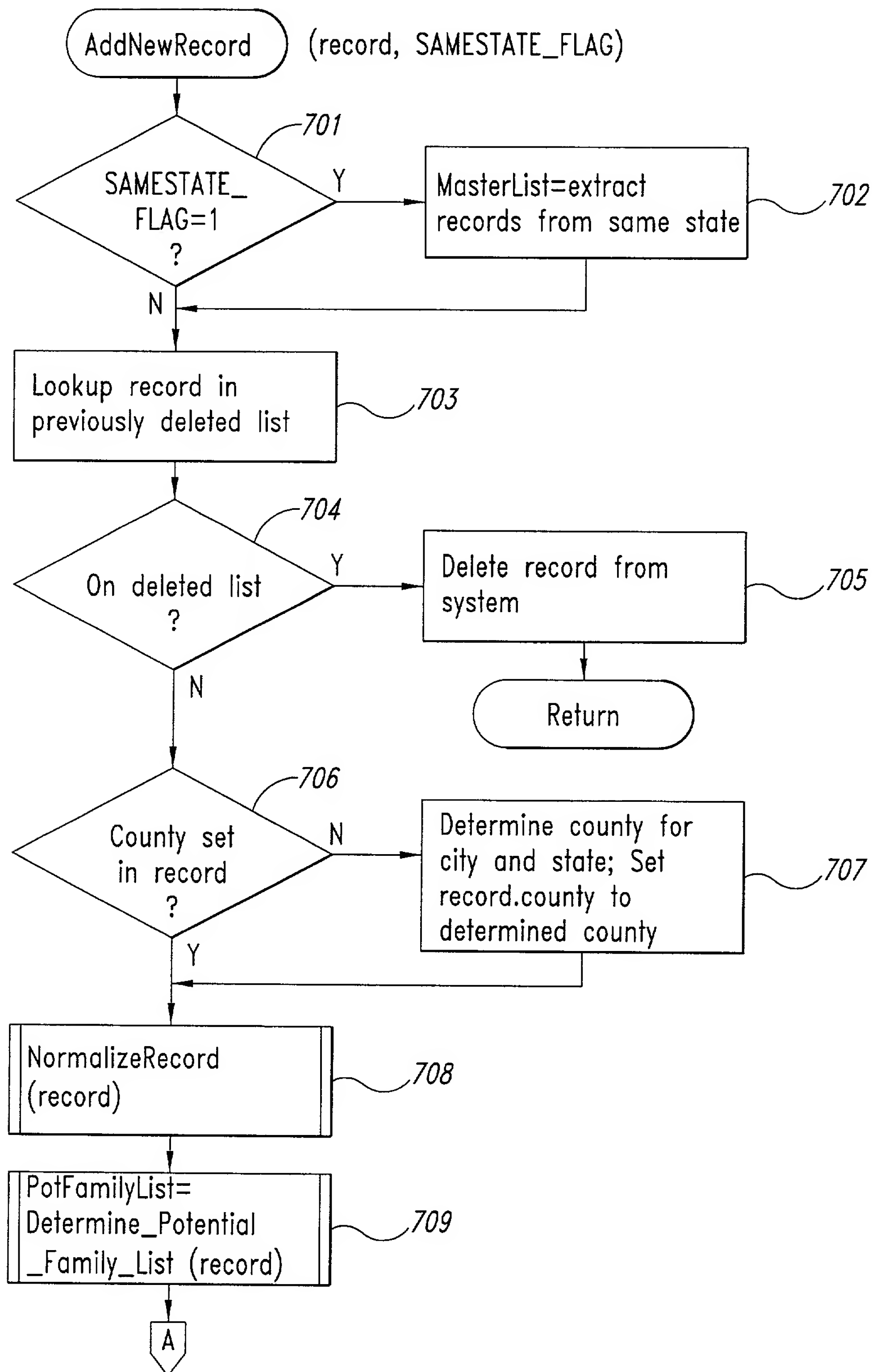


Fig. 7A

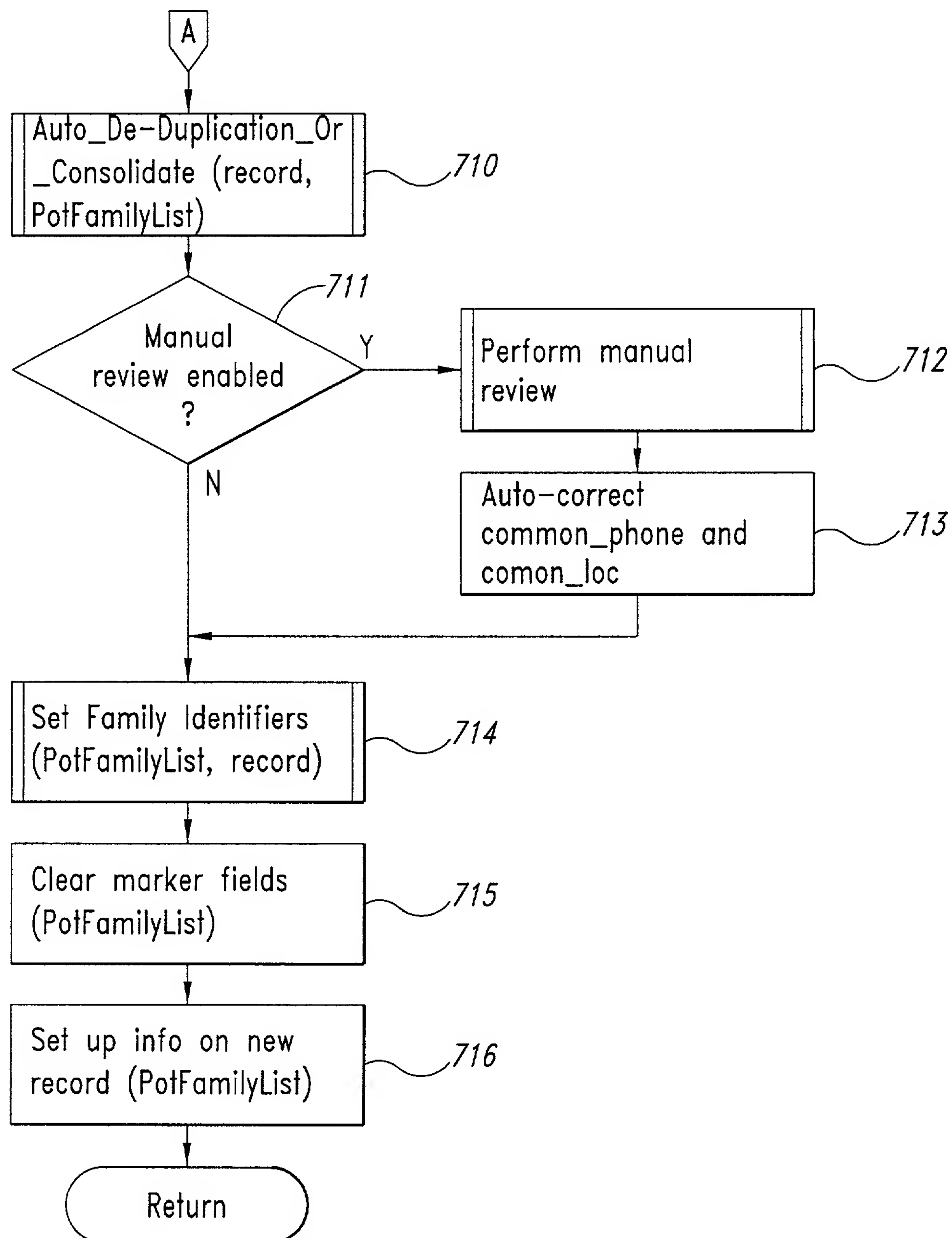


Fig. 7B

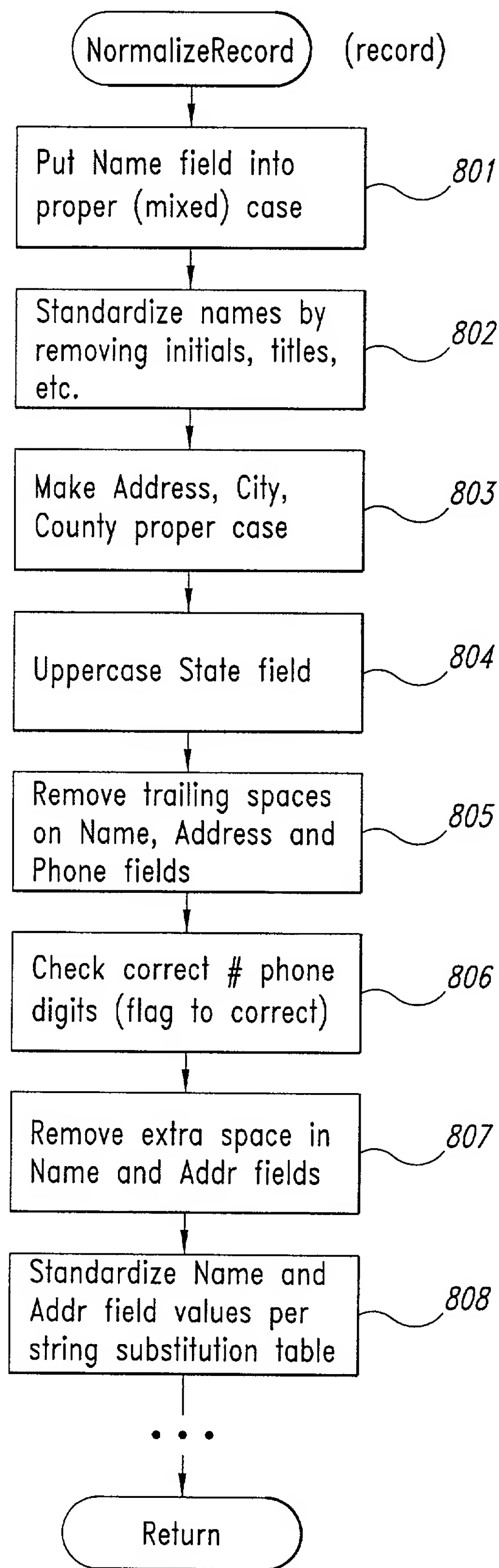


Fig. 8

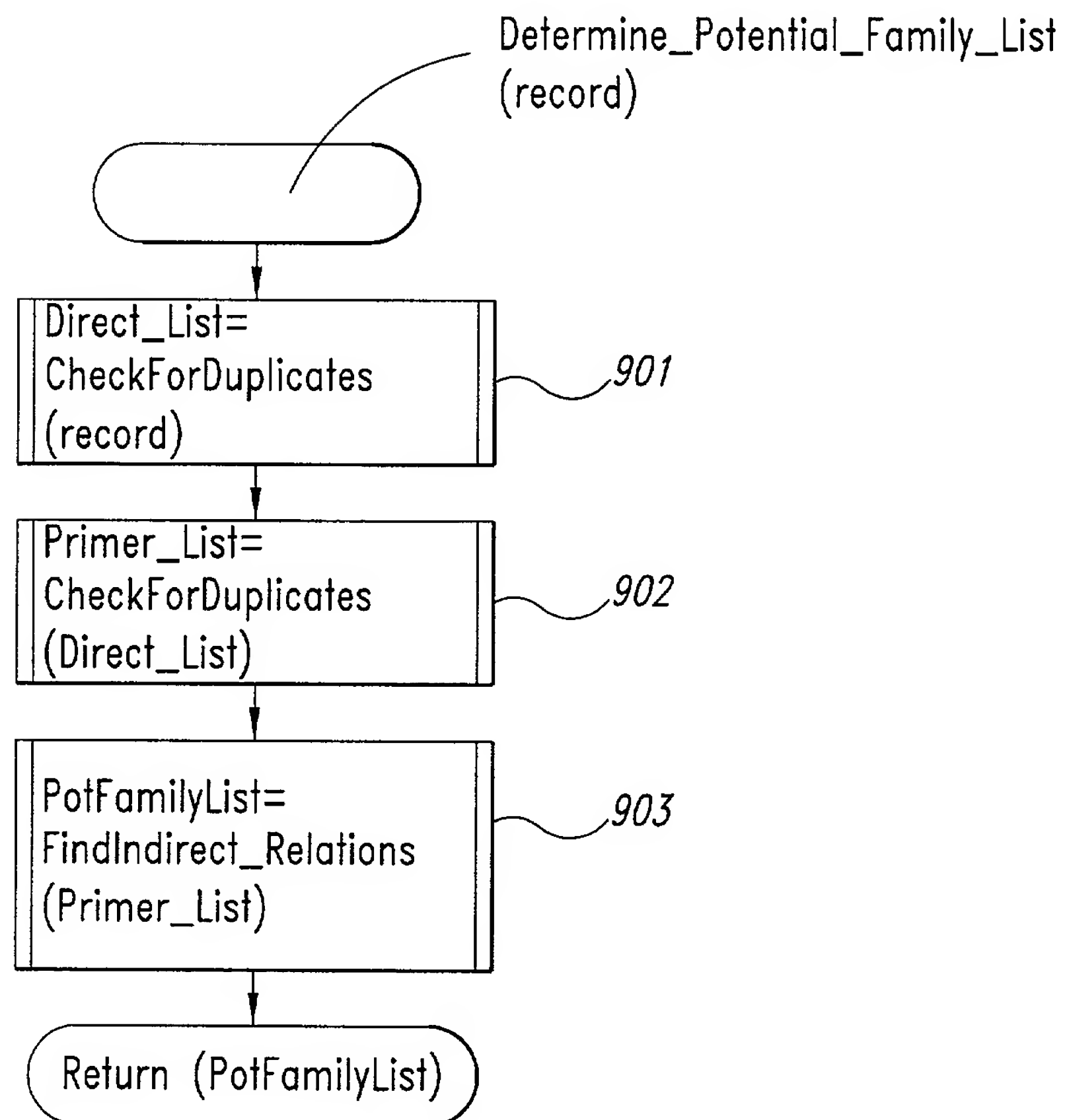


Fig. 9

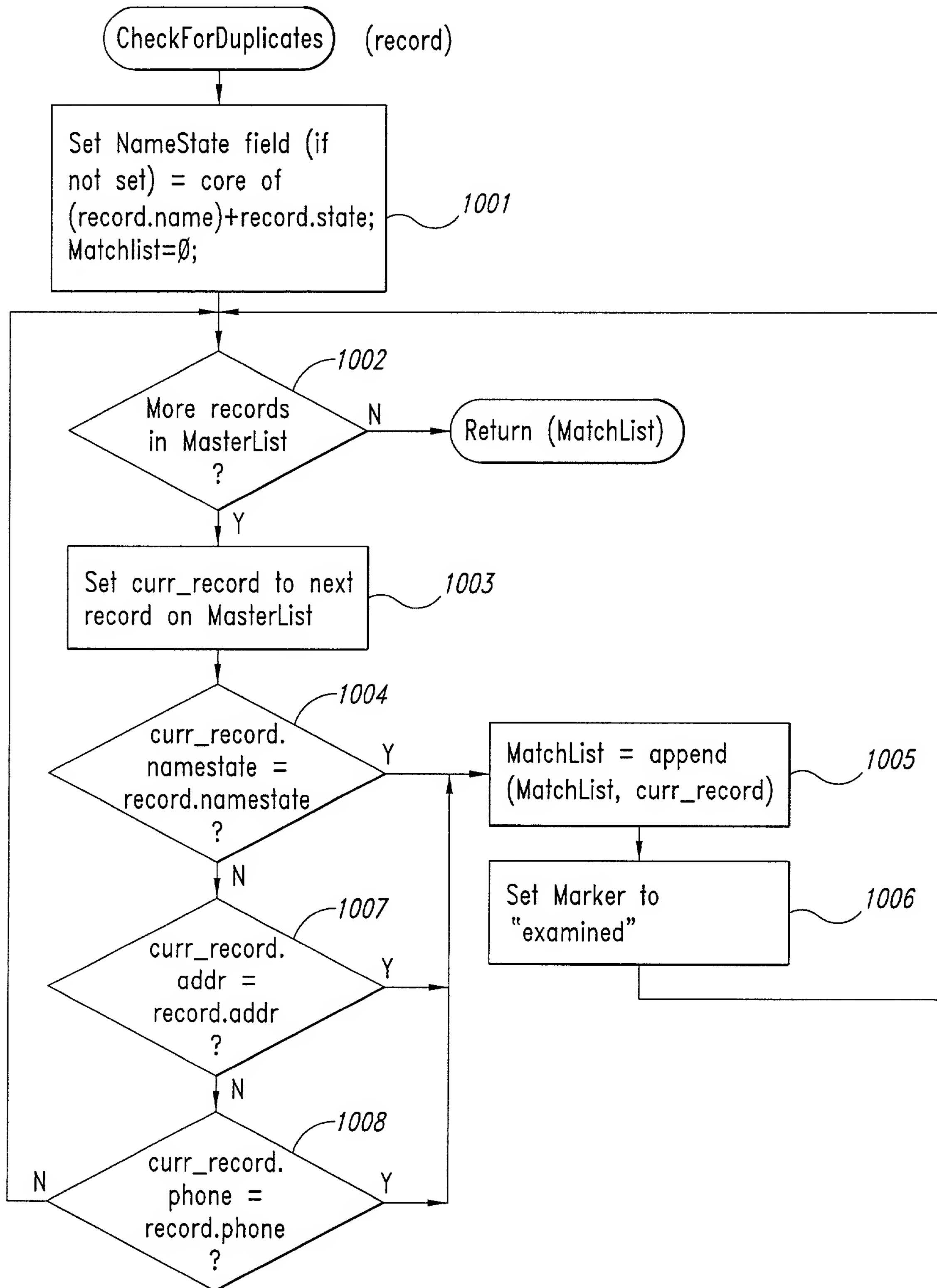


Fig. 10

Table 1: Results After Direct Check of New Record
Summary: Record 9 located Record 1 (by Phone), Records 7 and 8 (by Address) and Record 4 by NameState

#	NameState	Address	Common			Family	Source of Match	
			Phone	Location	Phone		Phone	Address
1	Fuel Processors, WA	701 First Avenue			367-3319	51	Phone	
2	Fuel Processors, WA	12521 30th Street NW	1		526-6149	51		
3	Fuel Processors, WA	222 15th Avenue NE	2	9	555-1212	51		
4	Oil Re-Refining, WA	345 Center Street	1		526-6149	51		NameState
5	John's Oil-Refining, WA	222 15th Avenue	2	9	555-1212	51		
6	John's Oil-Refining, WA	1600 Oak Tree Road			614-9200	51		
7	John's Oil Pickup, WA	11750 33rd Place		33	417-6000	7		Address
8	John's Service, WA	11750 33rd Place		33	417-3251	7		Address
9	Oil Re-Refining, WA	11750 33rd Place			367-3319			NEW RECORD

Table 2: Potential Family List (Found Set) After Direct Check
(Sorted by NameState)

#	NameState	Phone	Common	Common	Family	Source of Match	Potential	Record to	Found
1	Fuel Processors, WA	367-3319			51	Phone	Yes	1	1
7	John's Oil Pickup, WA	417-6000		33	7	Address	Yes	1	2
8	John's Service, WA	417-3251		33	7	Address	Yes	1	3
4	Oil Re-Refining, WA	526-6149	1		51	NameState	Yes	1	4
9	Oil Re-Refining, WA	367-3319				NEW RECORD	Yes	1	5

Fig. 11

Table 3: Results After Direct Check of Records in Table 2

Results After Loop 1
Summary: Record 1 located Record 9 (by Phone), Record 2 (by NameState) and Record 3 (by NameState), marks them as Potential Family members, and adds them to the end of the list.

#	NameState	Address	Phone	Common Phone	Common Location	Family	Source of Match	Potential Family	Record to Check	Found Order
1	Fuel Processors, WA	701 First Avenue	367-3319			51	Record to Check	Yes	1	1
7	John's Oil Pickup, WA	11750 33rd Place	417-6000		33	7		Yes	1	2
8	John's Service, WA	11750 33rd Place	417-3251		33	7		Yes	1	3
4	Oil Re-Refining, WA	345 Center Street	526-6149	1		51		Yes	1	4
9	Oil Re-Refining, WA	11750 33rd Place	367-3319				Phone	Yes	1	5
2	Fuel Processors, WA	12521 30th Street NW	526-6149	1		51	NameState	Yes	1	6
3	Fuel Processors, WA	222 15th Avenue	555-1212	2	9	51	NameState	Yes	1	7

Subsequent Results:
Summary Loop 2: Record 7 located Record 8 (by Address) and Record 9 (by Address), both previously found. Seeing that a Common Location ID has been already been assigned to this record (indicating there are already at least two records with this Address), the Common Location number is copied over to other records with the same Address that have an empty Common Location field, e.g. Record 9.
Summary Loop 3: Record 8 located Record 7 (by Address) and Record 9 (by Address), both previously found.
Summary Loop 4: Record 4 located Record 2 (by Phone) and Record 9 (by NameState), both previously found.
Summary Loop 5: Record 9 located Record 1 (by Phone), Record 7 (by Address) and Record 9 (by Address), all previously found.

Fig. 12

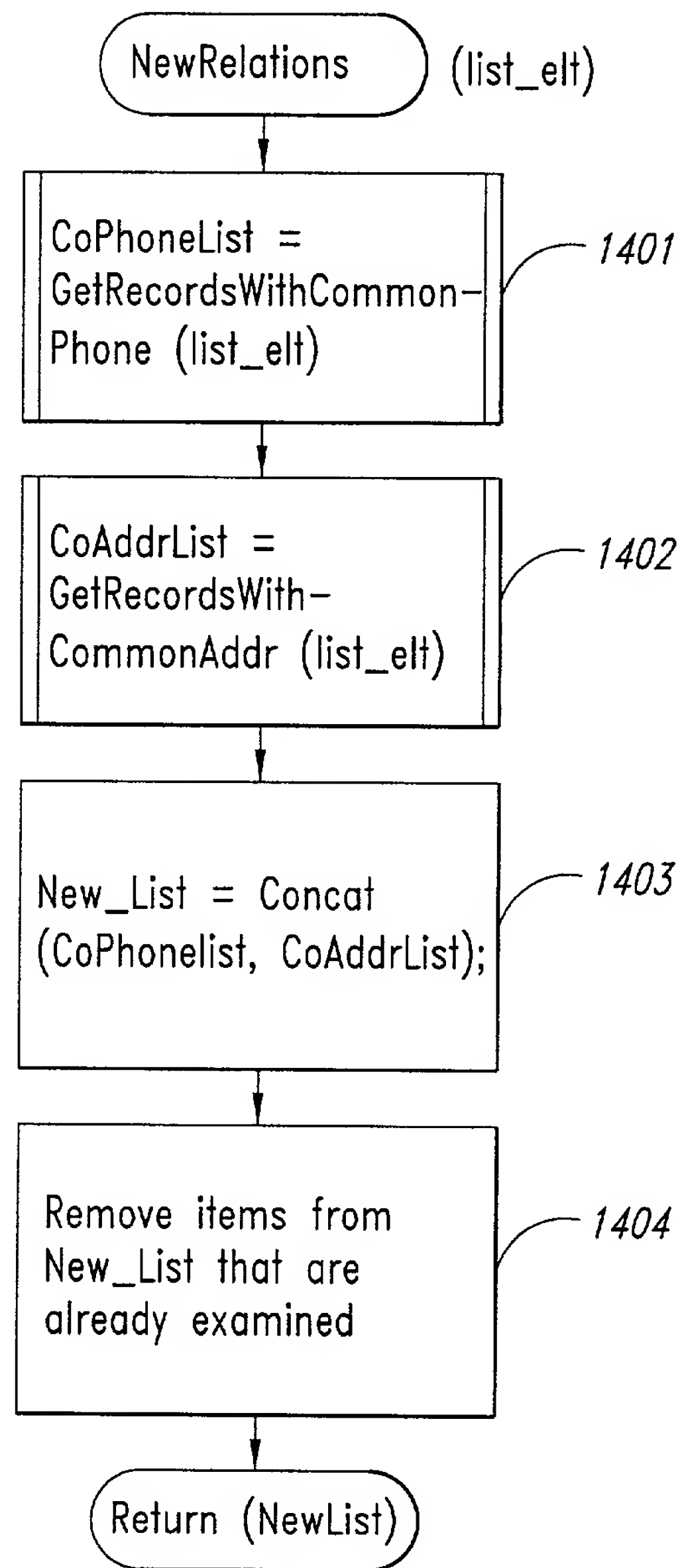


Fig. 14

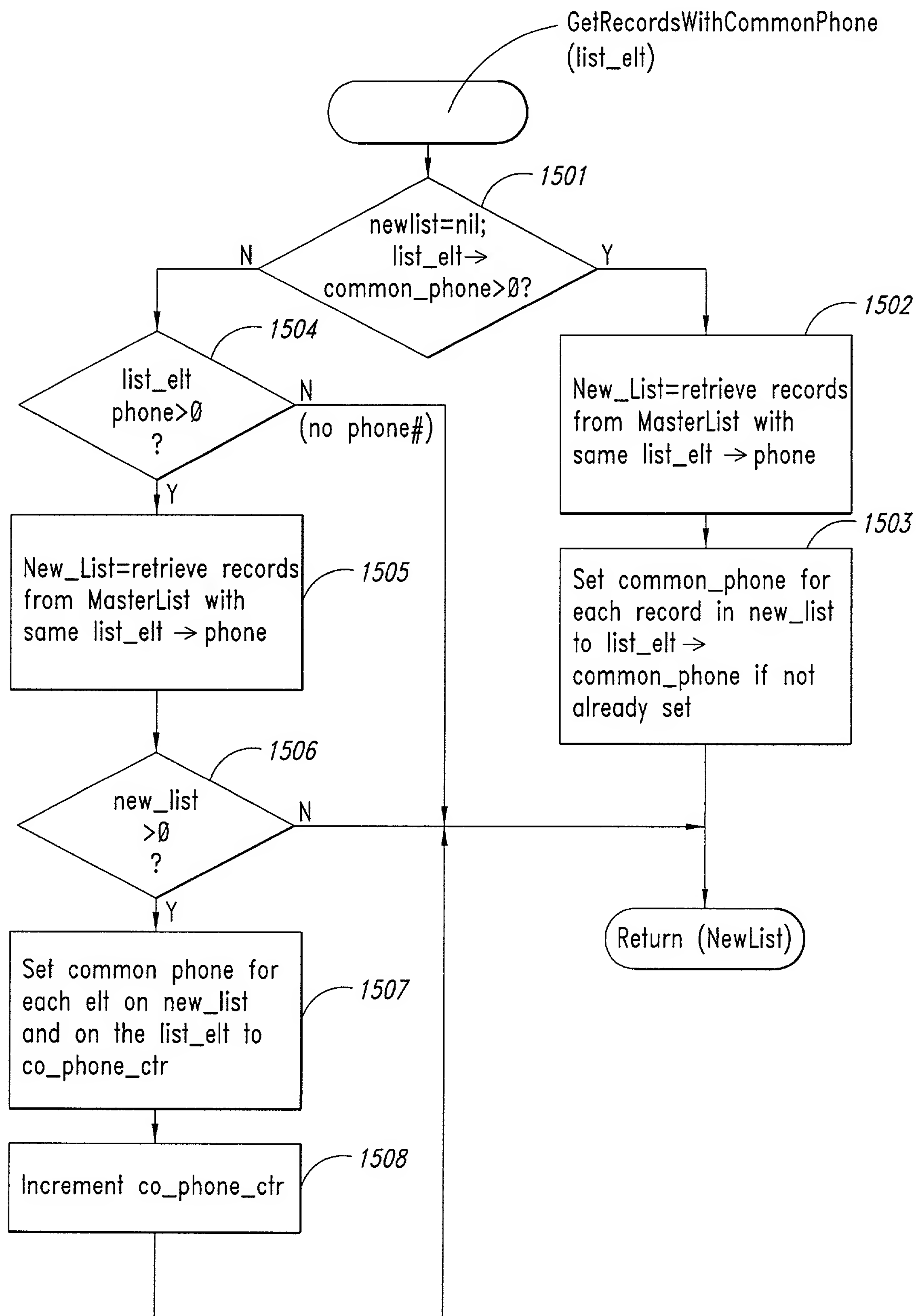


Fig. 15

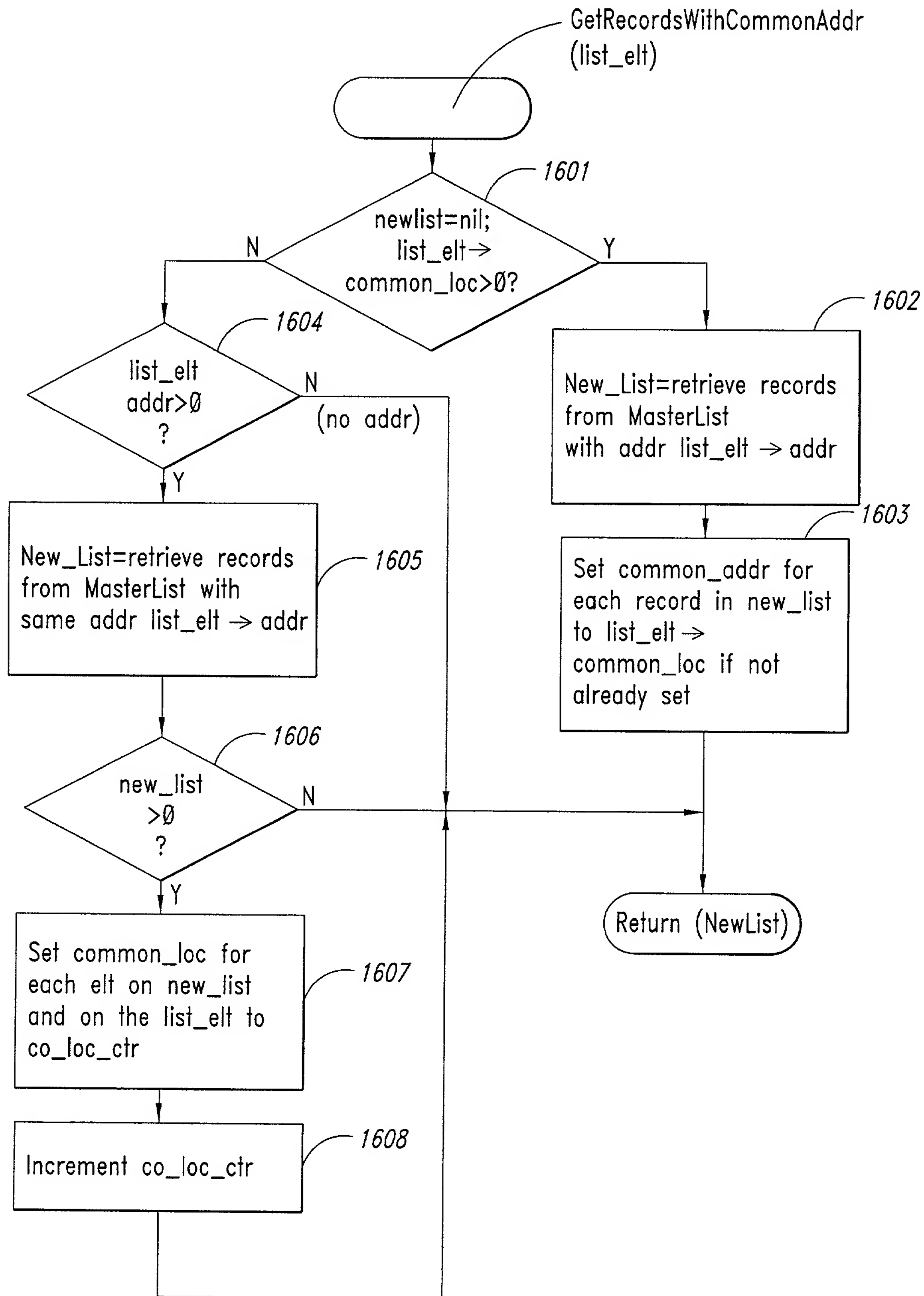


Fig. 16

Results After Indirect Search

Table 4: Results After Loop 1

Summary: Record 1 located Record 9 (by Phone), previously found.

#		NameState	Address	Common Phone	Common Location	Family	Source of Match	Potential Family	Record to Check	Found Order
1		Fuel Processors, WA	701 First Avenue	367-3319		51	Record to Check	Yes	1	1
7		John's Oil Pickup, WA	11750 33rd Place	417-6000	33	7		Yes	1	2
8		John's Service, WA	11750 33rd Place	417-3251	33	7		Yes	1	3
4		Oil Re-Refining, WA	345 Center Street	526-6149		51		Yes	1	4
9		Oil Re-Refining, WA	11750 33rd Place	367-3319			Phone	Yes	1	5
2		Fuel Processors, WA	12521 30th Street NW	526-6149		51		Yes	1	6
3		Fuel Processors, WA	222 15th Avenue	555-1212	9	51		Yes	1	7

Table 5: Subsequent Results

Note: Refer to Table 1 above for a complete list.

Summary Loop 2: Record 7 located Record 8 (by Address) and Record 9 (by Address), both previously found. Seeing that a Common Location ID has been assigned to this record, the Common Location number is copied over to other records with the same Address that have an empty Common Location field, e.g. Record 9.

Summary Loop 3: Record 8 located Record 7 (by Address) and Record 9 (by Address), both previously found.

Summary Loop 4: Record 4 located Record 2 (by Phone), previously found.

Summary Loop 5: Record 9 located Record 1 (by Phone), Record 7 (by Address) and Record 9 (by Address), all previously found.

Summary Loop 6: Record 2 located Record 4 (by Phone), previously found.

Summary Loop 7: Record 3 located Record 5 (by Phone and Address), a new record and adds it to the bottom of the list.

#		NameState	Address	Common Phone	Common Location	Family	Source of Match	Potential Family	Record to Check	Found Order
1		Fuel Processors, WA	701 First Avenue	367-3319		51		Yes	7	1
7		John's Oil Pickup, WA	11750 33rd Place	417-6000	33	7		Yes	7	2
8		John's Service, WA	11750 33rd Place	417-3251	33	7		Yes	7	3
4		Oil Re-Refining, WA	345 Center Street	526-6149		51		Yes	7	4
9		Oil Re-Refining, WA	11750 33rd Place	367-3319	33			Yes	7	5
2		Fuel Processors, WA	12521 30th Street NW	526-6149		51		Yes	7	6
3		Fuel Processors, WA	222 15th Avenue	555-1212	9	51	Record to Check	Yes	7	7
5		John's Oil-Refining, WA	222 15th Avenue	555-1212	9	51	Phone and Address	Yes	7	8

Fig. 17

Table 6: Complete Results After Loop 8 of Indirect Search
Summary: Record 5 located Record 3 (by Phone), previously found, and the loop ends.

#		NameState	Address	Common		Common	Common	Family	Source of Match	Potential	Record to	Found
				Phone	Location	Phone	Location	Family		Family	Check	Order
1	7	Fuel Processors, WA	701 First Avenue	367-3319				51		Yes	8	1
	8	John's Oil Pickup, WA	11750 33rd Place	417-6000	33			7		Yes	8	2
	8	John's Service, WA	11750 33rd Place	417-3251	33			7		Yes	8	3
	4	Oil Re-Refining, WA	345 Center Street	526-6149		1		51		Yes	8	4
	9	Oil Re-Refining, WA	11750 33rd Place	367-3319	33					Yes	8	5
	2	Fuel Processors, WA	12521 30th Street NW	526-6149		1		51		Yes	8	6
	3	Fuel Processors, WA	222 15th Avenue	555-1212	9	2		51	Phone	Yes	8	7
	5	John's Oil-Refining, WA	222 15th Avenue	555-1212	9	2		51	Record to Check	Yes	8	8

Fig. 18

Table 7: Alternative: Using NameState in the Embedded Search

Note: NameState is not included in the Embedded Search loop as shown herein, although it can be. In this case, in the event that a Record 6 exists that matches Record 5 only off of the NameState, Record 6 would not have been located by the Embedded Search on Record 5. The reasoning behind excluding the NameState in the Embedded Search is due to the extended relationship of Record 6 to the original set of records being searched on. It is, at this point, fairly removed and the Family ID loses some meaning. While this is not a common occurrence, a final loop searching off of the Families present in the final set of found records can find any remaining missing family members, thus picking up Record 6 if desired. Alternatively, the NameState can be included in the Embedded Search.

#	NameState	Common			Common			Source of Match	Potential		Record to Check	Found Order
		Address	Phone	Location	Family	Family	Family					
1	Fuel Processors, WA	701 First Avenue	367-3319		51	Yes	Yes				9	1
7	John's Oil Pickup, WA	11750 33rd Place	417-6000	33	7	Yes	Yes				9	2
8	John's Service, WA	11750 33rd Place	417-3251	33	7	Yes	Yes				9	3
4	Oil Re-Refining, WA	345 Center Street	526-6149		51	Yes	Yes				9	4
9	Oil Re-Refining, WA	11750 33rd Place	367-3319	33		Yes	Yes				9	5
2	Fuel Processors, WA	12521 30th Street NW	526-6149		51	Yes	Yes				9	6
3	Fuel Processors, WA	222 15th Avenue	555-1212	9	51	Yes	Yes				9	7
5	John's Oil-Refining, WA	222 15th Avenue	555-1212	9	51	Yes	Yes	Record to Check			9	8
6	John's Oil-Refining, WA	1600 Oak Tree Road	614-9200		51	Yes	Yes				9	9

Fig. 19

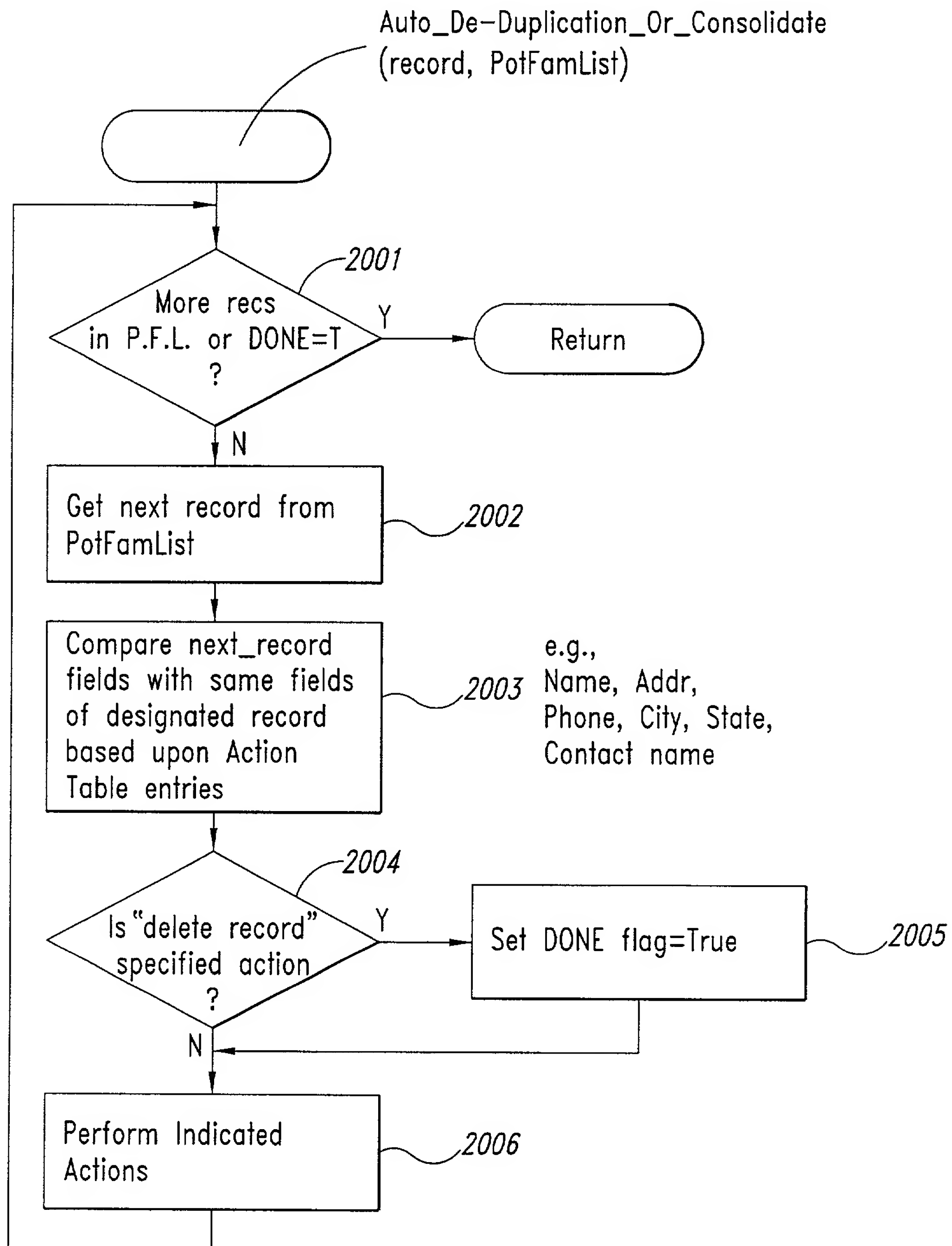


Fig. 20

Automatic De-Duplication

Table 8: Results After Dedup
Summary: Common Phone IDs are assigned to Records 1 and 9.

#	NameState	Address	Phone	Common		Family	Source of Match	Potential Family	Record to Check	Found Order
1	Fuel Processors, WA	701 First Avenue	367-3319	3	Location	51		Yes	9	1
7	John's Furnace Repair, WA	11750 33rd Place	417-6000		33	7		Yes	9	2
8	John's Service, WA	11750 33rd Place	417-3251		33	7		Yes	9	3
4	Oil Re-Refining, WA	345 Center Street	526-6149	1		51		Yes	9	4
9	Oil Re-Refining, WA	11750 33rd Place	367-3319	3	33			Yes	9	5
2	Fuel Processors, WA	12521 30th Street NW	526-6149	1		51		Yes	9	6
3	Fuel Processors, WA	222 15th Avenue	555-1212	2	9	51		Yes	9	7
5	John's Oil-Refining, WA	222 15th Avenue	555-1212	2	9	51	NameState	Yes	9	8
6	John's Oil-Refining, WA	1600 Oak Tree Road	614-9200			51	Record to Check	Yes	9	9

Fig. 21

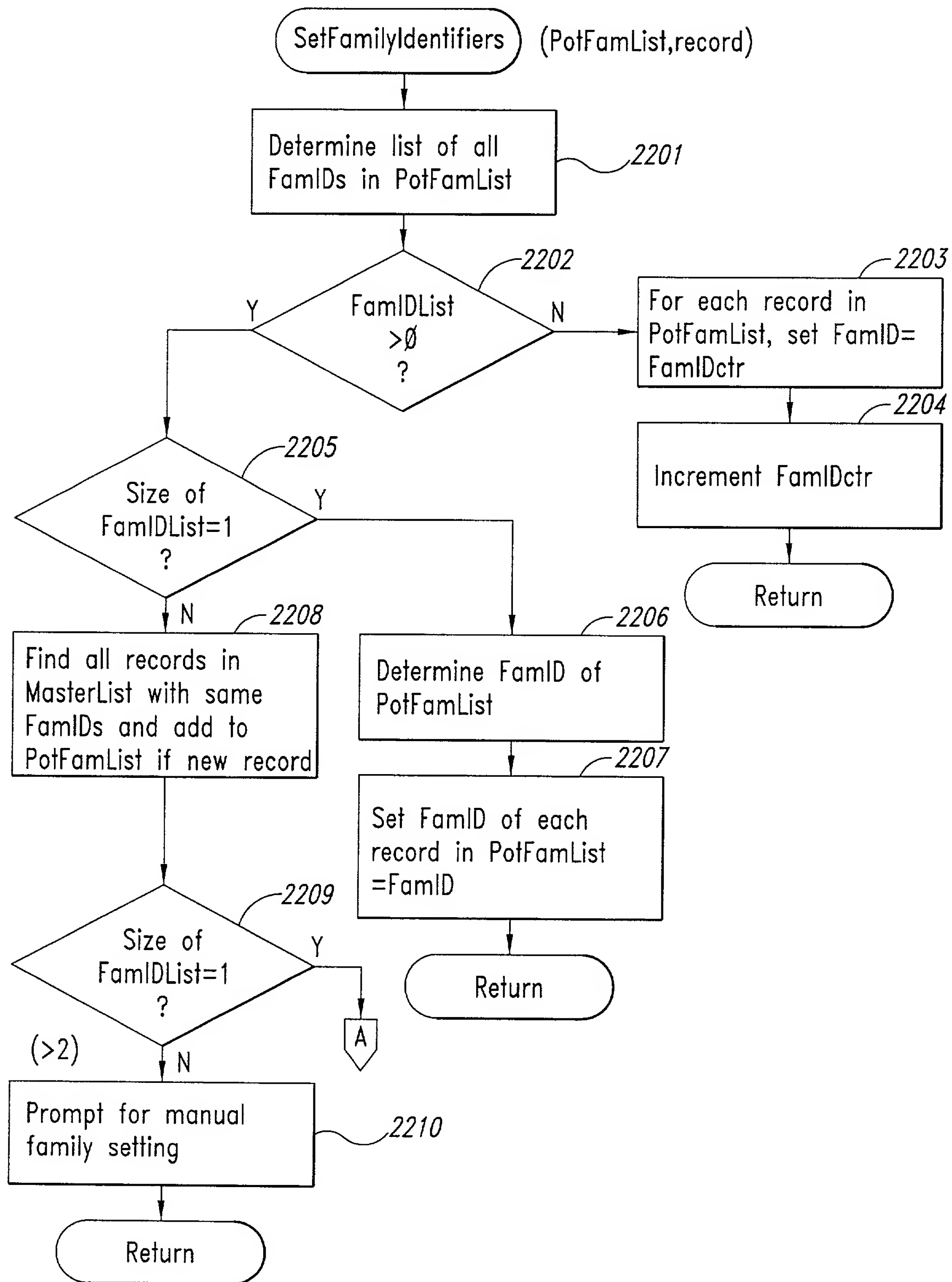


Fig. 22A

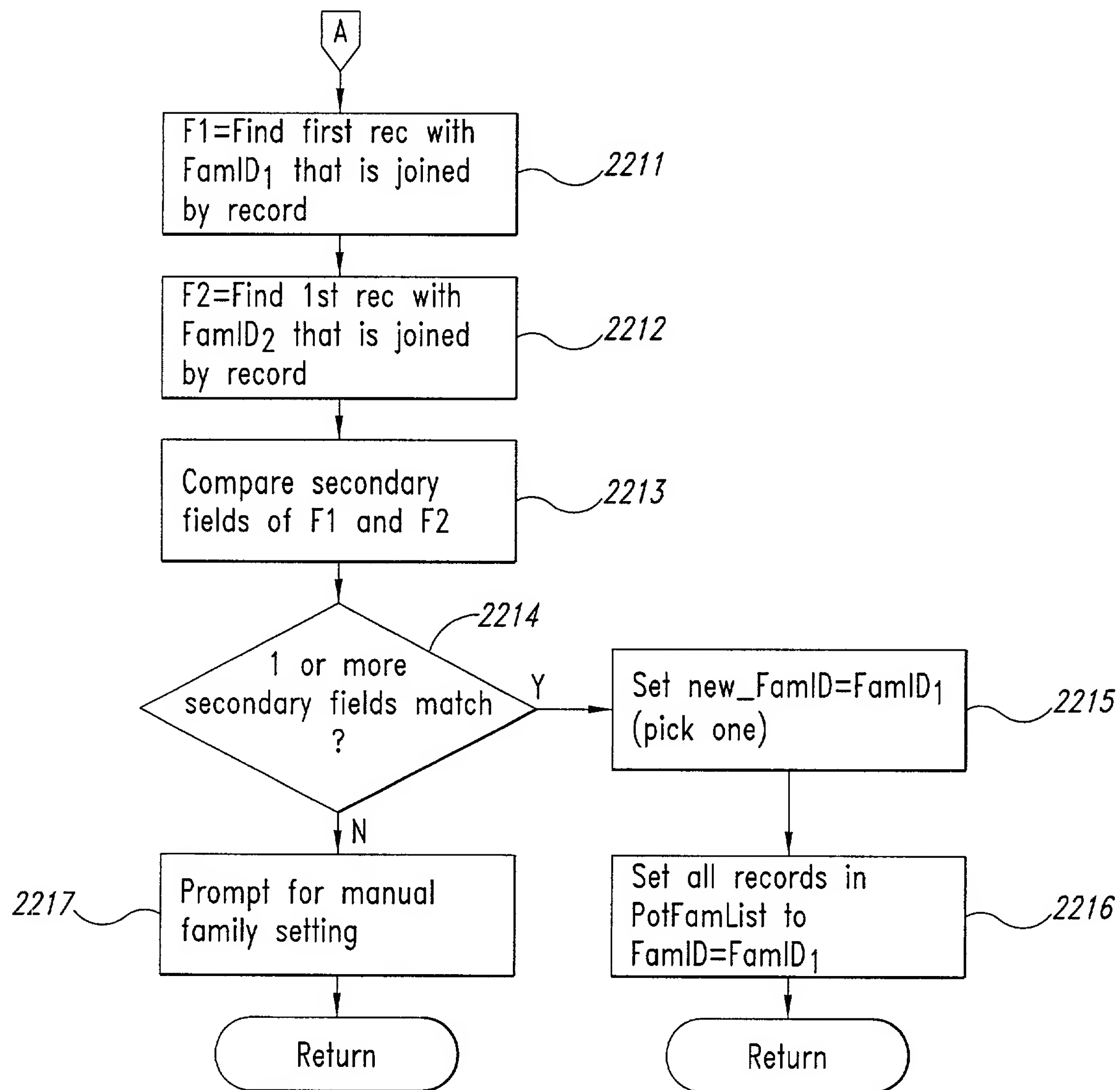


Fig. 22B

2301

#	NameState	Address	Phone	Common Phone	Common Location	Family	Source of Match	SIC Group	Alt Phone
1	Fuel Processors, WA	701 First Avenue	367-3319			51	Phone	29	
2	Fuel Processors, WA	12521 30th Street NW	526-6149	1		51		29	
3	Fuel Processors, WA	222 15th Avenue NE	555-1212	2	9	51		29	
4	Oil Re-Refining, WA	345 Center Street	526-6149	1		51	NameState	29	Match
5	John's Oil-Refining, WA	222 15th Avenue NE	555-1212	2	9	51		29	
6	John's Oil-Refining, WA	1600 Oak Tree Road	614-9200			51		29	
9	Oil Re-Refining, WA	11750 33rd Place	367-3319				NEW RECORD	29	
7	John's Oil Pickup, WA	11750 33rd Place	417-6000		33	7		29	
8	John's Service, WA	11750 33rd Place	417-3251		33	7		29	Match

Fig. 23

Table 10: Unrelated Families
Summary: Family 7 is inappropriately marked by the new record. A Family is not assigned.

2401

#	NameState	Address	Phone	Common Phone	Common Location	Family	Source of Match	SIC Group	Alt Phone
1	Fuel Processors, WA	701 First Avenue	367-3319			51	Phone	29	
2	Fuel Processors, WA	12521 30th Street NW	526-6149	1		51		29	
3	Fuel Processors, WA	222 15th Avenue NE	555-1212	2	9	51		29	
4	Oil Re-Refining, WA	345 Center Street	526-6149	1		51	NameState	29	
5	John's Oil-Refining, WA	222 15th Avenue NE	555-1212	2	9	51		29	
6	John's Oil-Refining, WA	1600 Oak Tree Road	614-9200			51		29	
9	Oil Re-Refining, WA	1000 Main Street	367-3319				NEW RECORD	29	
7	Ace Hardware, WA	1000 Main Street	417-6000		33	7		30	
8	Ace Engineering, WA	1000 Main Street	262-8877		33	7		87	

Fig. 24